

### **REMARKS**

Applicant respectfully requests reconsideration. Claims 28-36 were previously pending in this application. Claims 28 and 29 are amended herein and claim 35 is canceled. Claim 28 is amended to add the limitation of now canceled claim 35 and to indicate that all of the internucleotide linkages are modified. Claim 29 is amended to rewrite the claim as an independent claim. Claims 30 and 34 are withdrawn. As a result, claims 28-34 and 36 are still pending for examination with claims 28 and 29 being independent claims and claims 30 and 34 being withdrawn. No new matter has been added.

### **Claims 29 and 31-33**

Claims 29 and 31-33 were objected to only as being dependent on a rejected base claim. Applicant has rewritten claim 29 in independent form including all of the limitations of claim 28 as previously pending. Claims 31-33 depend from claim 29. Thus, it is believed that at least claims 29 and 31-33 are allowable.

### **Rejection Under 35 U.S.C. 103**

Claims 28 and 35 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al 1993 Journal of Clinical Microbiology No. 8, Vol. 31 No. 8 pgs. 2228-2232 in view of Goodchild et al 1990 The American Chemical Society, No. 1, No. 3 pgs. 165-182.

It would not have been obvious to one of skill in the art to modify the PCR primer described in Miyazaki et al to produce an oligonucleotide having a phosphorothioate backbone as suggested by the examiner because there is no suggestion that the primer might be degraded. Miyazaki et al describes a PCR reaction solution consisting of KCL, Tris-HCl, MgCl<sub>2</sub>, gelatin all four deoxynucleotides, the primers, the target DNA and AmpliTaq enzyme. The Examiner has suggested that one skilled in the art would be motivated to add a phosphate backbone modification to the primer to "prevent degradation by nucleases and increase or improve uptake." As far as Applicant is aware the PCR mixture does not include nucleases. Thus, it is unclear why one skilled in the art would make a modification to the primer that might disrupt its PCR priming function, in

order to prevent nuclease degradation. Additionally, the PCR primer is an *in vitro* reaction and does not involve cellular uptake. Thus, it is unclear why one skilled in the art would make a modification to the primer that might disrupt its PCR priming function, in order to improve uptake when the primer is not being taken up by a cell. Thus, a prima facie case of obviousness has not been established.

Additionally one of skill in the art would not have been motivated to modify the primer of Miyazaki et al such that each internucleotide linkage was a phosphorothioate internucleotide linkage. Applicant is not aware of a motivation to modify a primer such that all the internucleotide linkages are modified. It is unclear if such a modification would interfere with the activity of the primer and such a modification is unnecessary in preventing degradation since the PCR reaction is carried out in a controlled experimental setting with limited components, rather than in a cell or cell extract. Thus, one skilled in the art would not have been motivated to modify a PCR primer to produce an entirely phosphorothioate molecule as required by the amended claim.

Claim 36 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al 1993 Journal of Clinical Microbiology No. 8, Vol. 31 No. 8 pgs. 2228-2232 and Goodchild et al. 1990 The American Chemical Society, Vol. 1, No. 3 pgs. 165-182 as applied to claim 28 above, and further in view of Longiaru et al. Aug. 3, 1993 US Patent No. 5,232,829. For each of the reasons discussed above with respect to claim 28, dependent claim 36 is not obvious over the combination of the Miyazaki et al and Goodchild et al references. Longiaru does not supply the missing motivation. Thus, the rejection should be withdrawn.

#### **Double Patenting Rejection**

Claims 28 and 36 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 101, 107-109, 120-122, 124 of copending request No. 10/314,578.

US Application No. 10/314,578 has now issued as US Patent 7,271,156. The named inventors of US Application No. 10/314,578 are Arthur Krieg, Jorg Vollmer and Christian Schetter.

The owners of the patent are University of Iowa Research Foundation and Coley Pharmaceutical GmbH.

The rejection of claims 28 and 36 on the ground of nonstatutory obviousness-type double patenting is improper and should be withdrawn. The instant application is owned by University of Iowa Research Foundation, The United States of America, as represented by the Secretary, Department of Health and Human Services, and Coley Pharmaceutical Group Inc. US Application No. 10/314,578 is owned by University of Iowa Research Foundation and Coley Pharmaceutical GmbH. MPEP 804 II B(1) teaches that "obviousness-type double patenting requires rejection of an application claim when the claimed subject matter is not patentably distinct from the subject matter claimed in a commonly owned patent, or a non-commonly owned patent but subject to a joint research agreement as set forth in 35 USC 103(c)(2) and (3), when the issuance of a second patent would provide unjustified extension of the term of the right to exclude granted by a patent." Although the two patent applications have a common inventor and one owner in common, the applications are not commonly owned (common ownership requires all of the same owners). At the time of the instant invention the claimed invention was not assigned to or under an obligation of assignment to the University of Iowa Research Foundation and Coley Pharmaceutical GmbH, but rather was under an obligation of assignment to University of Iowa Research Foundation and the United States of America and was co-owned by Alfred Steinberg. At the time of the instant invention the claimed invention was not subject to a research agreement between the parties and the different owners of US Application No. 10/314,578. The instant application is not commonly owned or the subject of a joint research agreement with US Application No. 10/314,578. Thus, it is requested that the rejection be withdrawn.

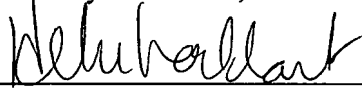
**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: September 26, 2007

Respectfully submitted,

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